

# Service Manual

**MODEL TD-750QZ**

**DIRECT DRIVE FULL AUTOMATIC TURNTABLE**



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## SPECIFICATIONS

Type .....	2 speed direct drive full-automatic with auto repeat
Platter .....	Aluminium alloy die-cast 310 mm, outer diameter: 1.4 kg.
Motor .....	Quartz locked PLL DC servo type
Speed .....	33-1/3 and 45 rpm.
Pitch control range .....	±4.5%
Rumble .....	70 dB (DIN B)
Wow & Flutter .....	Less than 0.04% (WRMS)
Tone Arm .....	Static balance tubular type
Head shell .....	Plug-in type
Effective length .....	220 mm
Overhang .....	15 mm
Adjustable force range .....	0 to 4g/1 turn of the dial
Cartridge .....	
Frequency response .....	20 – 20,000 Hz
Output voltage .....	2.5mV at 1 kHz 50 mm/sec
Channel separation .....	23 dB at 1 kHz
Channel difference .....	1.5 dB at 1 kHz
Tracking force .....	2 ±0.5g
Stylus tip .....	0.6 mil. diamond stylus
Power source .....	240V 50 Hz AC
Power consumption .....	9.5 watts
Dimensions .....	430(W) x 135(H) x 390(D) mm
Net weight .....	7.5 kg
Accessories .....	45 rpm adaptor

Specifications are subject to change without notice.

# DISASSEMBLY INSTRUCTIONS

## 1. Bottom Board Removal

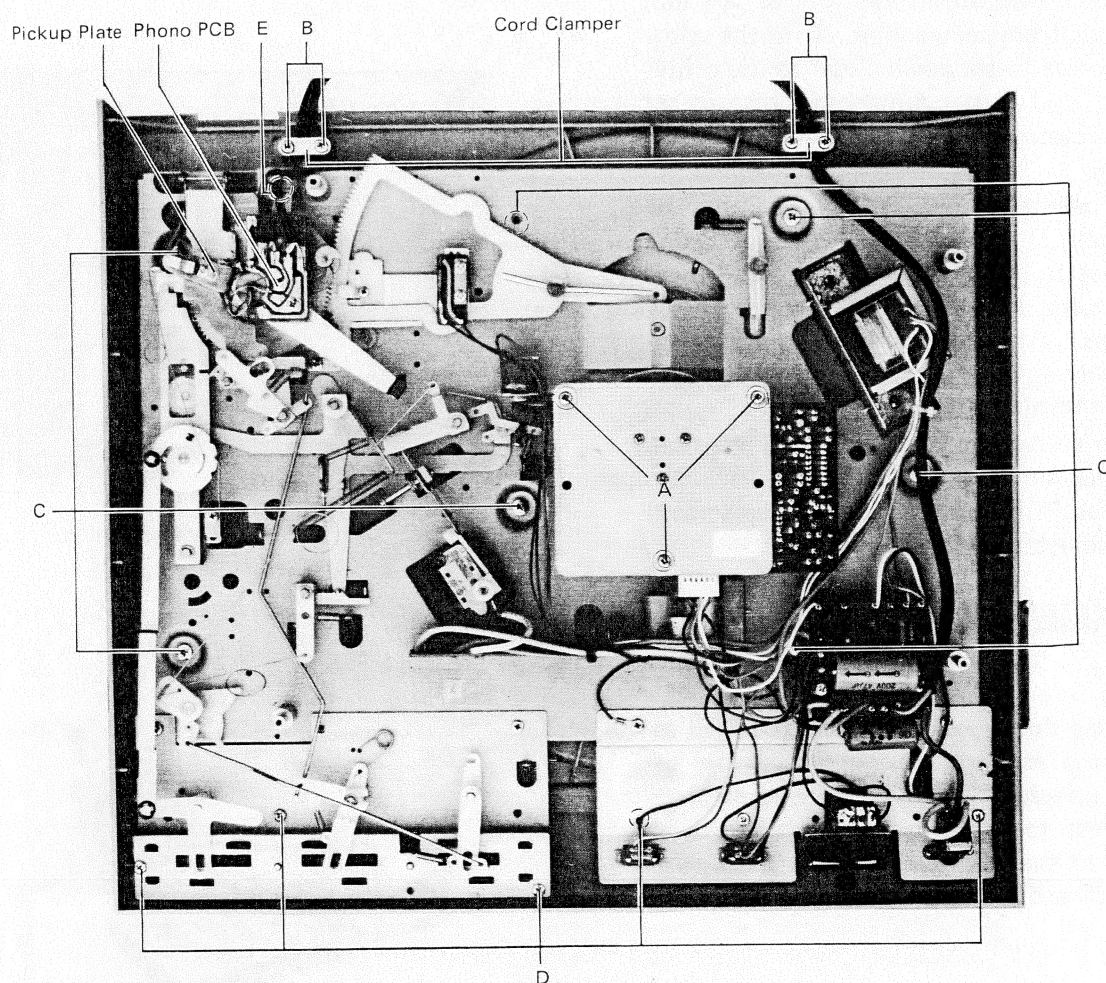
- (1) Remove the dust cover, turntable and sheet then lock the tone arm and turn over the set.
- (2) Remove four screws and washers on the bottom board and lift up the bottom board.

## 2. Motor Removal

- (1) Disconnect the plug for motor-wiring.
- (2) Remove three screws (A) on the motor and remove it from the bottom side.

## 3. Chassis Removal

- (1) Remove five slide knobs and a repeat knob from the top of the set.
- (2) Remove the bottom board.
- (3) From the bottom side, remove two cord clampers removing four screws (B) and then unsolder the lead wires connecting the tone arm and the phono P.C. board.
- (4) Remove seven screws (C) fixing the chassis, five screws (D) fixing the front panel and remove a screw (E) fixing the phono P.C. board bracket.
- (5) Retighten two screws on the pickup plate and remove it.
- (6) The chassis with some parts can be removed.





# ADJUSTMENT

## 1. Height of Arm Lifter

Turn the adjusting screw (F) clockwise or counter-clockwise and adjust the distance between the stylus tip and face of a record disc on the turntable to be 6 mm.

## 2. Auto-return Position

- (1) Remove the rubber cap (G) on the panel and hold the tone arm on the arm rest, and you can see an adjusting screw through the hole.
- (2) Turn the screw clockwise to make the stylus lift up faster, and turn the screw counter-clockwise to make it lift up later.

## 3. Auto-in Position

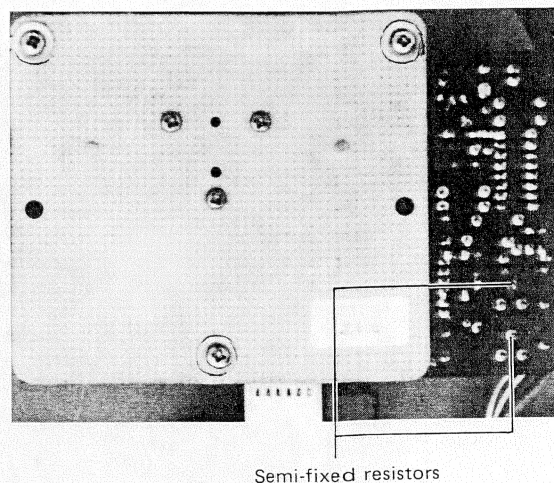
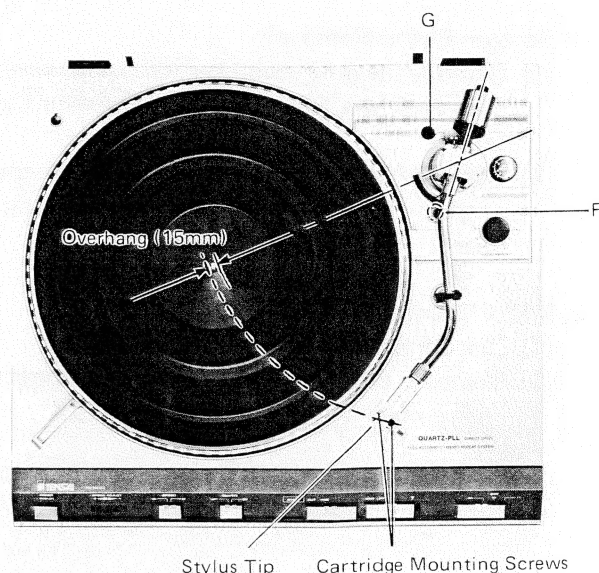
- (1) Remove the rubber cap (G) on the panel and move the tone arm to the center shaft until you see another adjusting screw through the hole.
- (2) Adjust the screw so that the stylus should be set down within 145 mm to 147 mm radius from center shaft. Turn the screw clockwise to set down closer to the center shaft, and turn counter-clockwise to set down closer to the edge of turntable.

## 4. Overhang

- (1) The overhang of this tone arm should be 15 mm.
- (2) Adjust it by moving the cartridge back and forth, loosening the cartridge mounting screws. After adjustment, the screws should be tightened.

## 5. Speed Controller

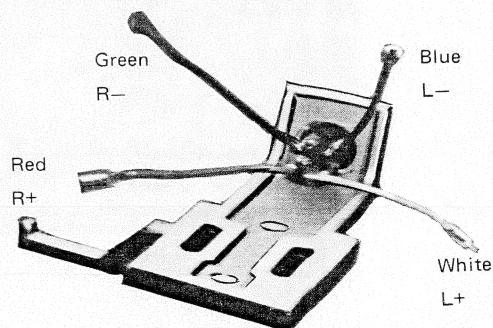
Never try to adjust the semi-fixed resistors on the Motor P.C.Board, as this Quartz Locked PLL motor is precision assembled and adjusted at the factory.



# REPLACEMENT

## 1. Cartridge

- (1) Replace the cartridge in the head shell so that the axis of the cartridge should be lined up with the axis of the head shell.
- (2) Connect the coloured wires in the head shell to the suitable terminals of the replaced cartridge.

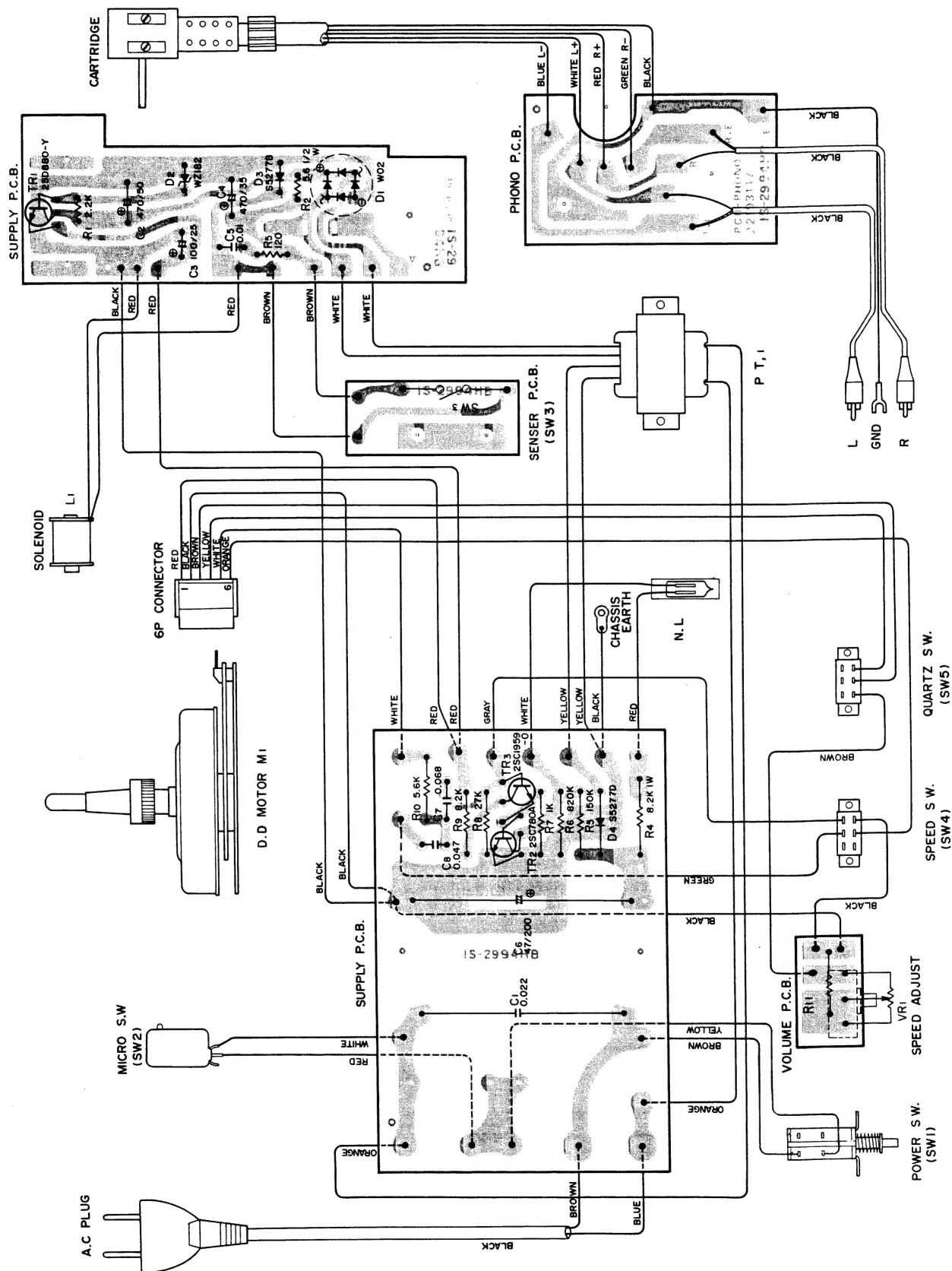




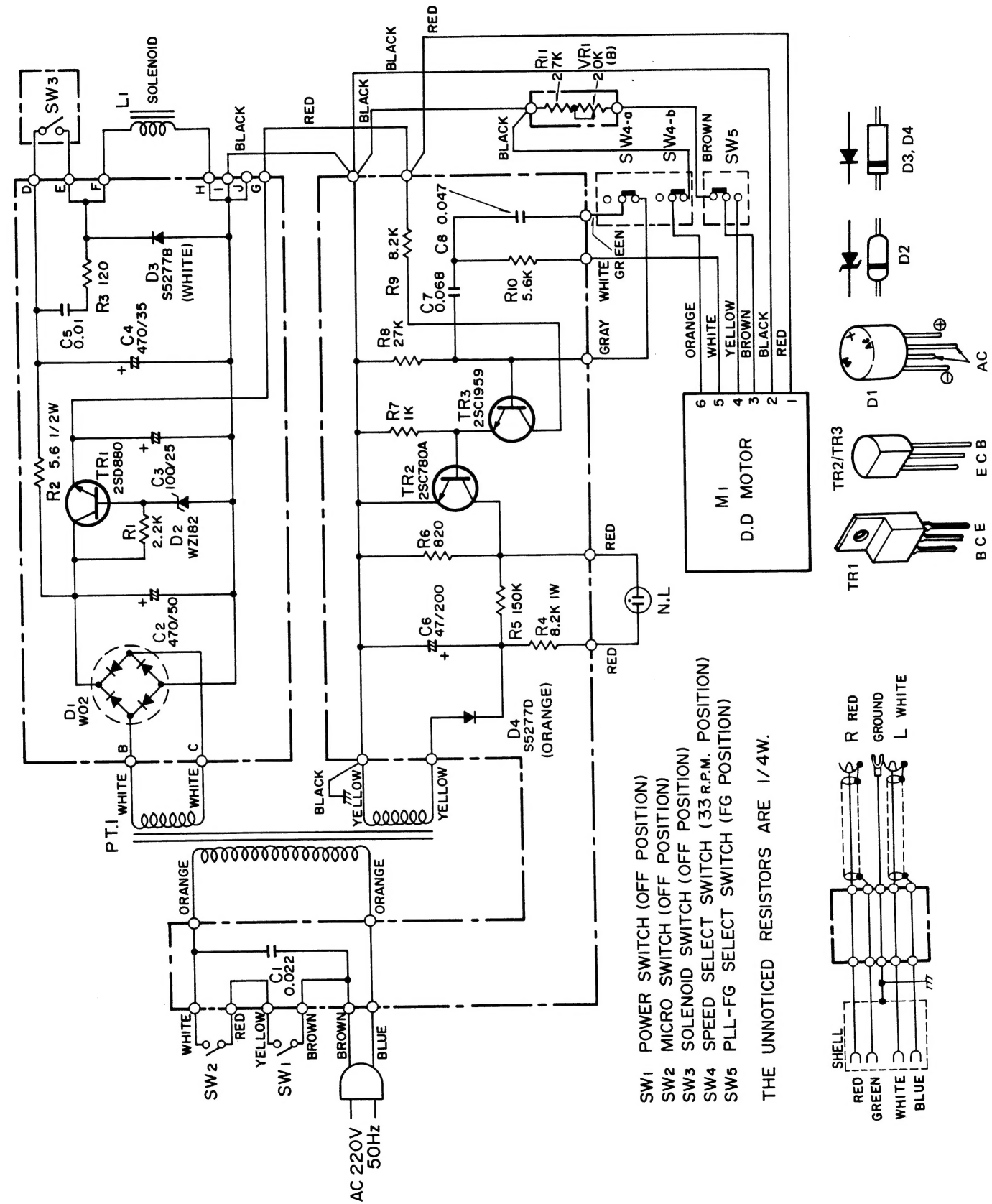
# TROUBLE-SHOOTING GUIDE

Trouble	Cause	Remedy
<b>Motor</b>		
Motor does not rotate.	<ol style="list-style-type: none"> <li>1. No power to motor.</li> <li>2. Damage of motor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check leads of power circuit motor and switch.</li> <li>2. Replace motor.</li> </ol>
<b>CAUTION:</b> The motor assembly is precisely assembled and adjusted at the factory. An entire motor should be replaced to a difective motor assembly.		
<b>Tone Arm</b>		
Stylus causes jumping or improper tracking.	<ol style="list-style-type: none"> <li>1. Stylus pressure too light.</li> <li>2. Stylus worn out or damaged.</li> <li>3. External vibration.</li> <li>4. Cartridge case touches the surface of record.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust for specified pressure.</li> <li>2. Replace stylus</li> <li>3. Install the player where there is no vibration.</li> <li>4. Excessive stylus pressure. Adjust for specified value.</li> </ol>
<b>Sound</b>		
No sound, or only from one channel.	<ol style="list-style-type: none"> <li>1. Cartridge circuit open.</li> <li>2. Improper connection of headshell and tone arm.</li> <li>3. Open lead between headshell and output cord or mis-wiring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace cartridge. Replace leads.</li> <li>2. Correct the connection. Check that the connection is free from oil, dust etc. and clean.</li> <li>3. Replace the lead (if the tonearm lead is open, replace the pick-up assembly) or correct wiring.</li> </ol>
Distorted sound.	<ol style="list-style-type: none"> <li>1. Stylus worn out or damaged.</li> <li>2. Cantilever bent.</li> <li>3. Stylus pressure to light or heavy.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace stylus.</li> <li>2. Replace stylus.</li> <li>3. Adjust for specified pressure.</li> </ol>
Rumble or wow.	<ol style="list-style-type: none"> <li>1. Motor damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the motor assembly.</li> </ol>
Hum.	<ol style="list-style-type: none"> <li>1. Cartridge is affected by electromagnetic field.</li> <li>2. Not grounded.</li> </ol>	<ol style="list-style-type: none"> <li>1. Keep equipment such as motors or transformers away from the player.</li> <li>2. Connect ground lead to ground terminal of the amplifier.</li> </ol>
Howling.	<ol style="list-style-type: none"> <li>1. Cartridge picks up vibration or sound pressure from speaker.</li> </ol>	<ol style="list-style-type: none"> <li>1. Install the player on a rigid table or in location where howling is minimized.</li> </ol>
<b>Auto Return/Auto-In</b>		
No Return	<ol style="list-style-type: none"> <li>1. Defect of proximity switch.</li> <li>2. Defect of solenoid.</li> <li>3. Deformation of clutch.</li> <li>4. Poor alignment of auto-return.</li> <li>5. Deformation of roter spring (and no auto-in,too)</li> <li>6. Loose connection of pickup plate</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace.</li> <li>2. Replace</li> <li>3. Replace.</li> <li>4. Align.</li> <li>5. Replace.</li> <li>6. Tighten the set screws on the pickup plate.</li> </ol>
Unsuitable auto-in or auto-returning position.	<ol style="list-style-type: none"> <li>1. Poor alignment of adjusting screws.</li> </ol>	<ol style="list-style-type: none"> <li>1. Align. See adjustment section.</li> </ol>
<b>Auto-Repeat</b>		
Abnormal auto repeat action.	<ol style="list-style-type: none"> <li>1. Deformation of pull springs on the start levers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace.</li> </ol>
Abnormal repeat times.	<ol style="list-style-type: none"> <li>1. Deformation of pull spring on the clutch lever.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace.</li> </ol>

# BOTTOM VIEW OF P.C.BOARD AND WIRING

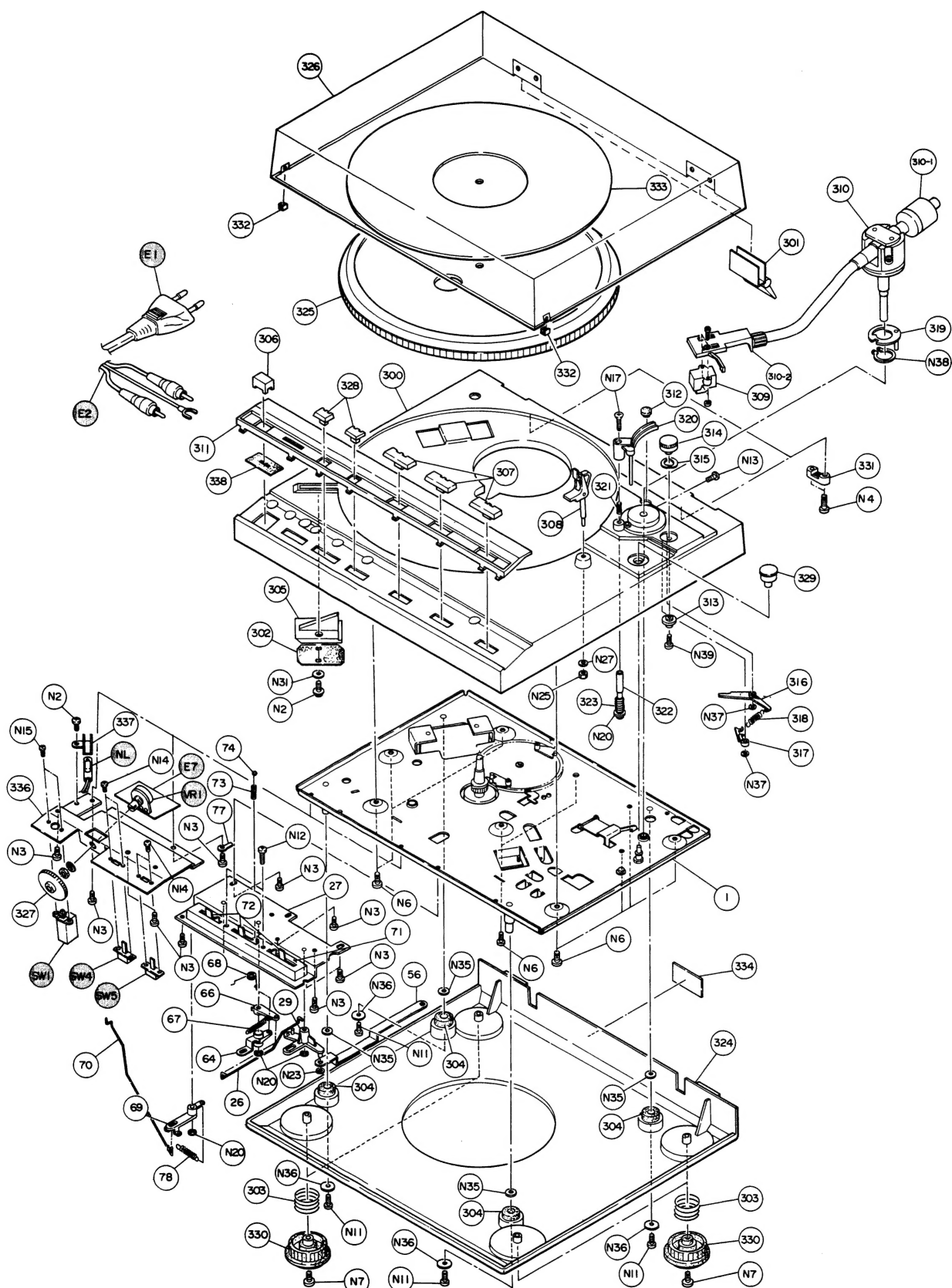


SCHEMATIC DIAGRAM



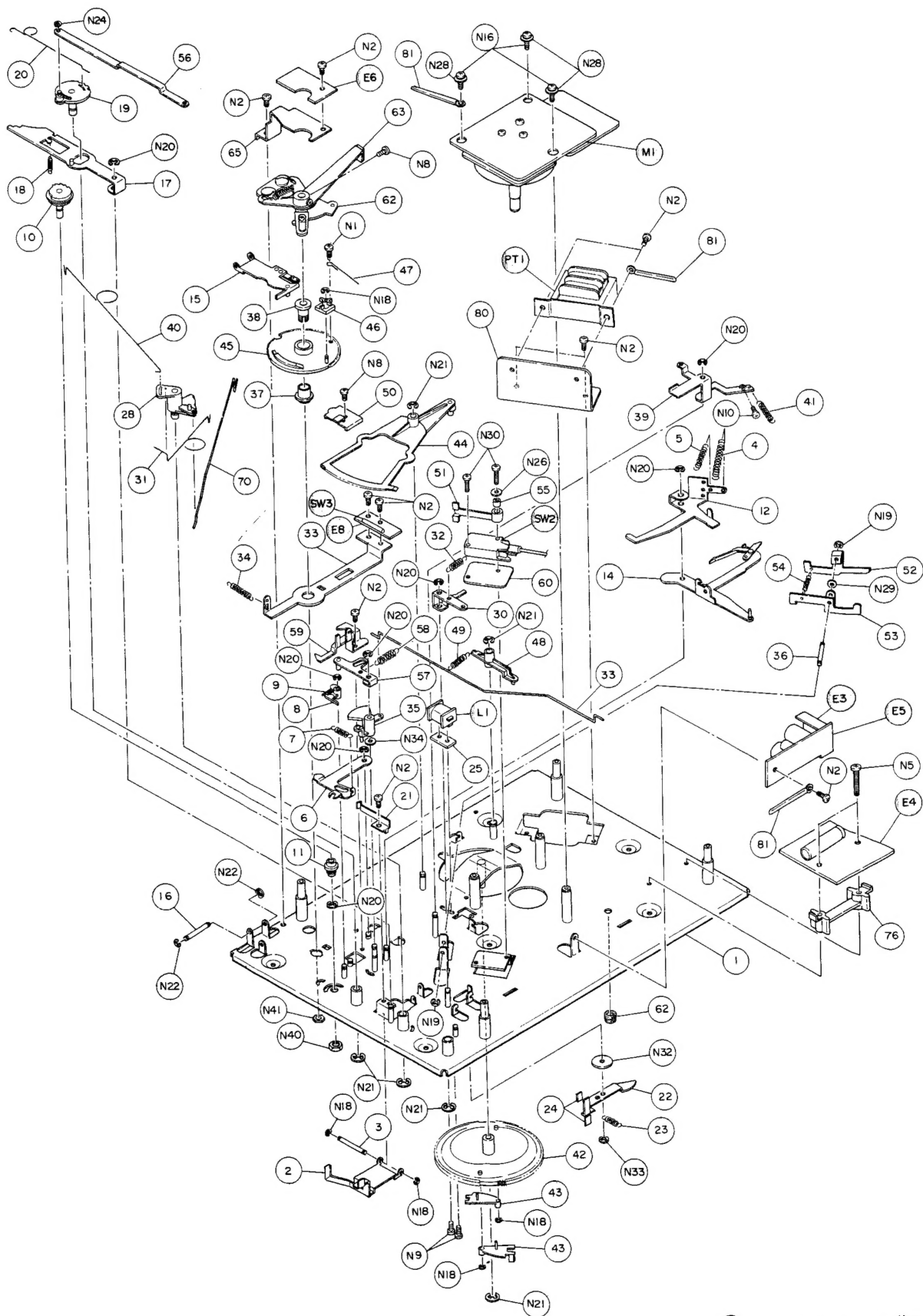


## EXPLODED VIEW



 ; See electrical parts list.

## EXPLODED VIEW



⊙; See electrical parts list.

# PARTS LIST

Symbol No.	Part No.	Description
<b>CABINET</b>		
300	20848606	Cabinet
301	20861711	Hinge
302	22854743	Screen
303	22776648	Push Spring
304	22756961	Rubber Cushion
305	20857610	Lens
306	20874669	Push Button
307	20872614	Slide Knob
308	20738735	Pickup Rest Assembly
309	22155506	Cartridge
310	20731919	Tone Arm
310-1	20731926	Main Weight
310-2	20736644	Head Shell
311	20836686	Front Panel
312	20881768	Rubber Cap
313	20757758	Inside Force Canceller Cam
314	20872615	Inside Force Canceller Knob
315	22772572	Plate Spring
316	20754767	Inside Force Canceller Lever
317	20754768	Inside Force Canceller Lever
318	22776640	Pull Spring
319	20754806	Inside Force Canceller Lever
320	20764772	Lifter Bar Assembly
321	22776641	Push Spring
322	20764755	Lifter Shaft
323	22776650	Push Spring
324	20826775	Bottom Board
325	20723725	Turntable
326	20848605	Dust Cover
327	20872612	Speed Knob
328	20827613	Slide Knob
329	20872616	Repeat Knob
330	20852648	Foot
331	22184182	Cord Clamp
332	22756962	Rubber Cushion
333	20723724	Table Sheet
334	22867695	Main Label
336	20015800	Sub Chassis
337	22755564	Lamp Holder
338	22756966	Cushion
<b>MECHANISM</b>		
1	20015807	Chassis Assembly
2	20754764	Seesaw Lever
3	20764762	Shaft, Seesaw
4	22776622	Pull Spring
5	22776629	Pull Spring
6	20754755	Lever
7	22776626	Pull Spring
8	20754763	Clutch Lever
9	22776625	Pull Spring
10	20757757	Cam

Symbol No.	Part No.	Description
11	20773891	Bearing
12	20754757	Start Lever
13	20707766	Plate Spring
14	20754775	Start Lever
15	20754766	Lever Assembly
16	22746604	Pin
17	20754759	Stop Lever
18	22776624	Pull Spring
19	20764780	Select Shaft
20	20707770	Torsion Spring
21	20707761	Plate Spring
22	20754758	Reject Lever
23	22776624	Pull Spring
24	22756900	Cushion
25	20772892	Spacer
26	20754800	Joint
27	20015799	Sub Chassis Assembly
28	20757763	Start Cam
29	20754789	Select Lever
30	20754756	Lever
31	20707767	Torsion Spring
32	22776655	Pull Spring
33	20754761	Switch Lever
34	22776628	Pull Spring
35	20757760	Lifter Cam
36	20764771	Shaft, Switch
37	20773890	Bearing Gear
38	20764758	Gear Shaft
39	20754760	Lever, Switch
40	20764765	Reject Pole
41	22776629	Pull Spring
42	20727645	Main Gear
43	20754770	Auto Clutch
44	20727648	Gear
45	20727646	Pickup Gear
46	20754753	Turn Plate
47	22775529	Torsion Spring
48	22740549	Gear Stopper
49	22776627	Pull Spring
50	20743968	Gear Guide
51	20754785	Lever, Switch
52	20754786	Lever, Switch
53	20754787	Lever, Switch
54	22776638	Pull Spring
55	22753664	Spacer
56	20754799	Joint, Select
57	20754777	Manual Plate
58	22776637	Pull Spring
59	20754776	Guide Plate
60	22748849	Barrier
61	20881768	Rubber Cap
62	20754750	Pickup Plate Assembly
63	22755566	Magnet



Symbol No.	Part No.	Description
64	20754788	Cue Lever
65	20021784	P.C. Board Bracket
66	20754797	Cue Lever
67	22776651	Pull Spring
68	20707768	Torsion Spring
69	20754798	Start Lever
70	20754801	Start Joint
71	20735692	Slide Bracket
72	20754790	Slide Lever
73	22776639	Push Spring
74	74090397	Steel Ball 5/32
76	20746853	P.C. Board Stay
78	22771928	Pull Spring
80	20746996	Power Trans Stay
81	22754981	Lug Clamp
<b>SCREWS AND RINGS</b>		
N1	72632605	Bind Head Tapping 2.6 x 5
N2	72633006	Bind Head Tapping 3 x 6
N3	72633008	Bind Head Tapping 3 x 8
N4	72633012	Bind Head Tapping 3 x 12
N5	72633020	Bind Head Tapping 3 x 20
N6	72634010	Bind Head Tapping 4 x 10
N7	72634012	Bind Head Tapping 4 x 12
N8	70432604	Bind Head 2.6 x 4
N9	70432605	Bind Head 2.6 x 5
N10	70432612	Bind Head 2.6 x 12
N11	70433008	Bind Head 3 x 8
N12	70433016	Bind Head 3 x 16
N13	22701758	Bind Head, Ni Plated 4 x 18
N14	20795975	Bind Head w/Spring Washer 2 x 6
N15	20795955	Bind Head w/Spring Washer 3 x 6
N16	20795986	Bind Head w/Spring Washer 3 x 8
N17	22701755	Flat Head 2 x 10
N18	74050015	Ring E 1.5φ
N19	74050025	Ring E 2.5φ
N20	74050030	Ring E 3φ
N21	74050040	Ring E 4φ
N22	74060020	Ring CS 2φ
N23	74060030	Ring CS 3φ
N24	74060040	Ring CS 4φ
N25	73653000	Hexagon Nut M3
N26	74001030	Washer M3
N27	74010030	Spring Washer M3
N28	22703553	Special Washer 3.2φ x 10φ
N29	22752797	Special Washer 4.1φ x 8φ
N30	22701751	Pan Head, Poly 3 x 20
N31	22701599	Pan Head, Poly 3 x 25
N32	22752799	Special Washer
N33	22703575	Ring E 3.1φ
N34	74001040	Washer M4 5.1φ x 12
N35	22703606	Special Washer 6.2φ x 20φ

Symbol No.	Part No.	Description
N36	20791631	Special Washer 3.2φ x 15φ
N37	74001020	Washer M2
N38	20798757	Ring Out 17φ
N39	72632008	Bind Head Tapping 2 x 8
N40	22702540	Hexagon Nut 7mm
N41	20796631	Special Nut
<b>ELECTRICAL PARTS</b>		
TR1	36848520	Transistor 2SD880-Y
TR2	36737680	Transistor 2SC780A(G)TM-0
TR3	36319320	Transistor 2SC1959-O
D1	22115251	Diode W02
D2	22115332	Diode WZ182
D3	37978380	Diode S5277B 100V (WHITE)
D4	37978385	Diode S5277D 200V (ORANGE)
C1	22303027	Oil 0.022μF 450V M
C2	22448471	Electrolytic 470μF 50 WV
C3	22446101	Electrolytic 100μF 25 WV
C4	22447471	Electrolytic 470μF 35 WV
C5	22342103	Ceramic 0.01μF M
C6	22440341	Electrolytic 47μF 200 WV
C7	22371683	Mylar 0.068μF J
C8	22371473	Mylar 0.047μF J
R1	22545222	Carbon Film 2.2K ohm
R2	22547569	Carbon Film 5.6 ohm ½W, J
R3	22545121	Carbon Film 120 ohm ¼W, J
R4	22570164	Metal Oxide 8.2K ohm 1W, J
R5	22545154	Carbon Film 150K ohm ¼W, J
R6	22545824	Carbon Film 820K ohm ¼W, J
R7	22545102	Carbon Film 1K ohm ¼W, J
R8	22545273	Carbon Film 27K ohm ¼W, J
R9	22545822	Carbon Film 8.2K ohm ¼W, J
R10	22545562	Carbon Film 5.6K ohm ¼W, J
R11	22545273	Carbon Film 27K ohm ¼W, J
VR1	22625212	Variable Resistor 20K ohm B
SW1	22140518	Push Switch
SW2	22140559	Micro Switch
SW3	22140615	Proximity Switch
SW4, 5	22140485	Slide Switch
NL	22113476	Neon Lamp
M1	22125577	DD Motor
PT1	22223523	Power Transformer
L1	22147215	Solenoid
E1	22176550	Power Cord
E2	22164819	US 1P Plug Cord
E3	22748794	Radiator
E4	22193164	P.C. Board, Supply
E5	22193167	P.C. Board, Supply
E6	22193163	P.C. Board, Phono
E7	22193154	P.C. Board, VR
E8	22193169	P.C. Board, Sensor
<b>ACCESSORY</b>		
	20971653	45rpm Adapter